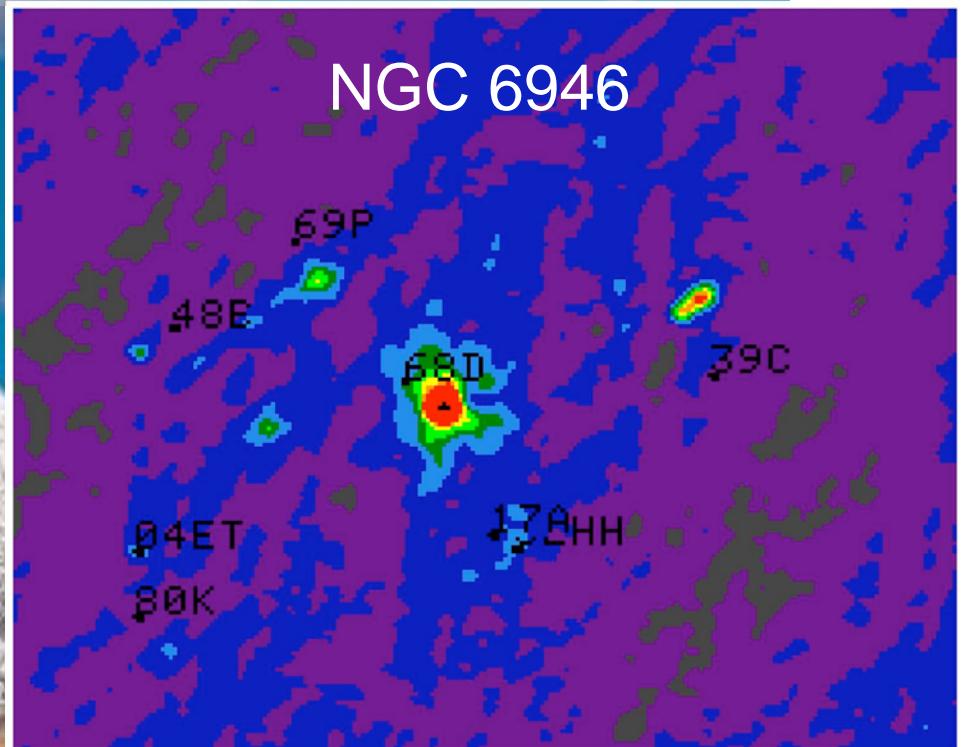
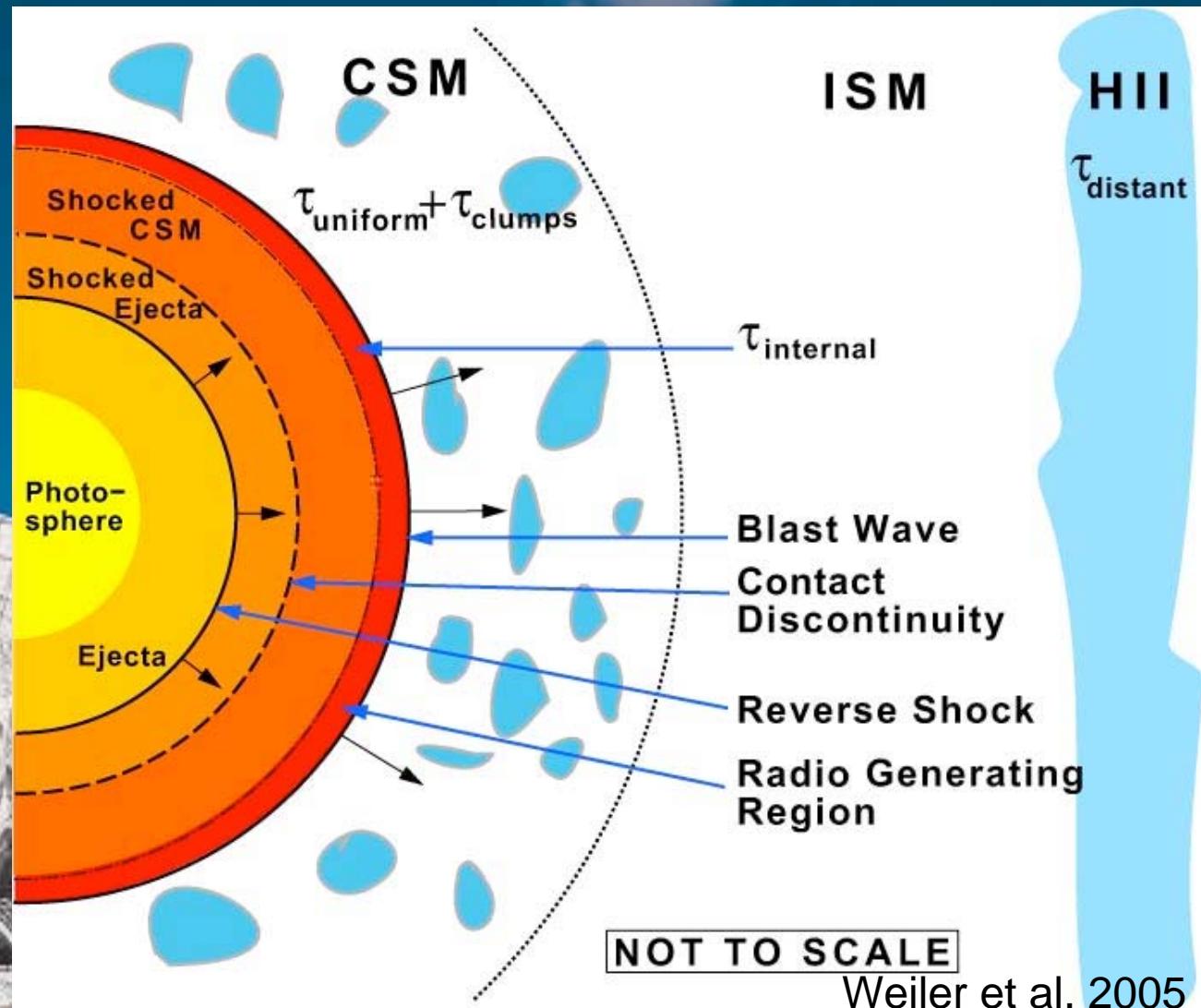


Recent Type II Supernovae

Christopher J. Stockdale, M. T. Kelley (Marquette University),
K. W. Weiler (NRL), N. Panagia (STScI), J. M. Marcaide (Valencia),
R. A. Sramek (NRAO), C. L. M. Williams (MIT),
S. D. Van Dyk (Spitzer/Cal. Tech.)



The Cartoon Version of the Model

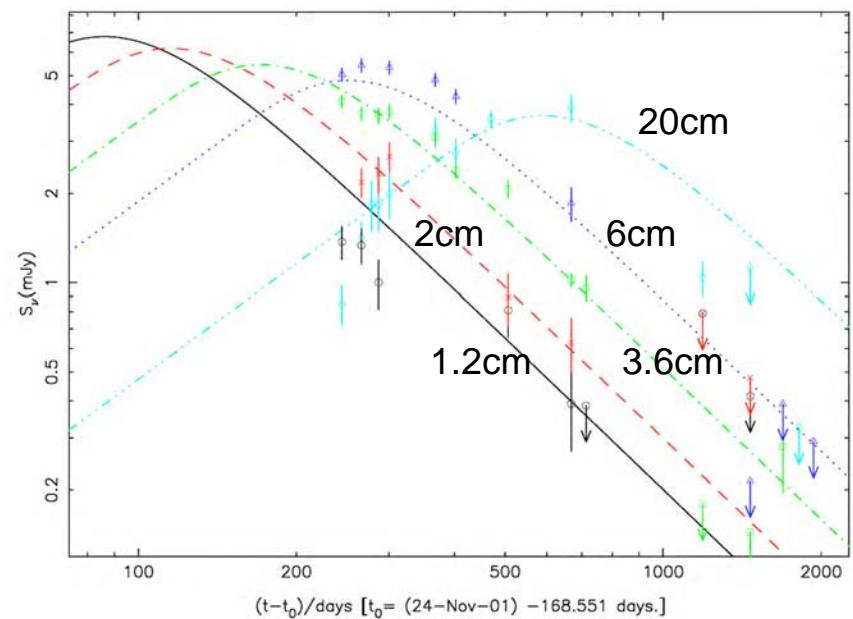
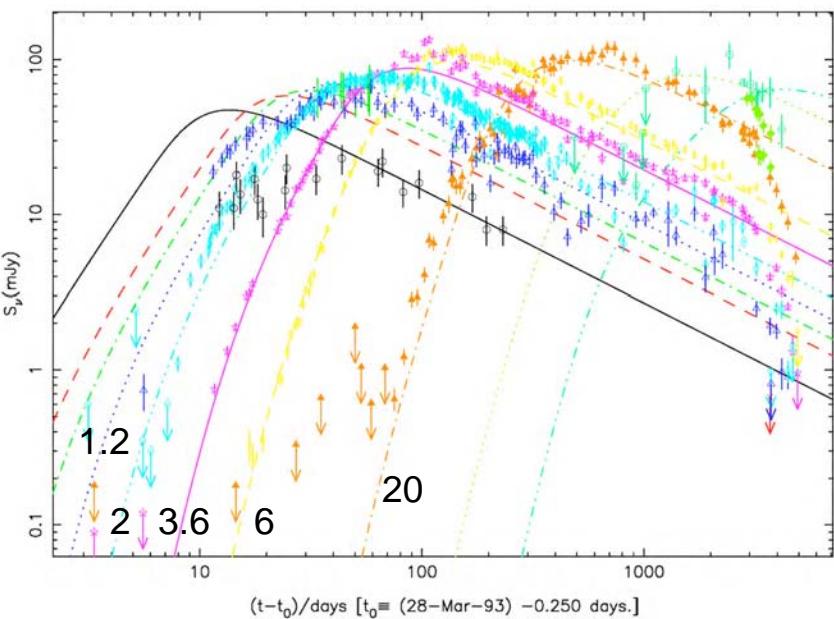


Weiler et al. 2005

Type I Ib SNe

1993J
(3.3 Mpc)

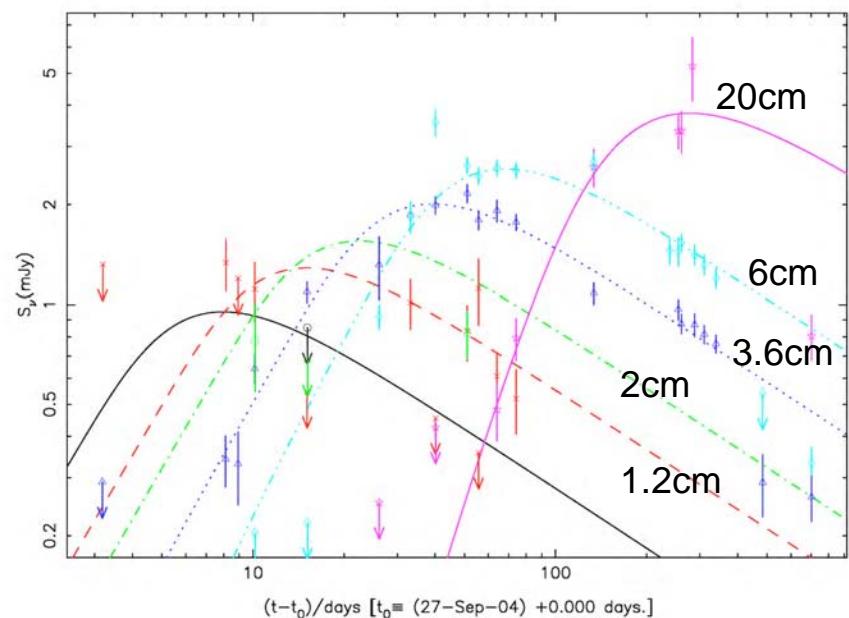
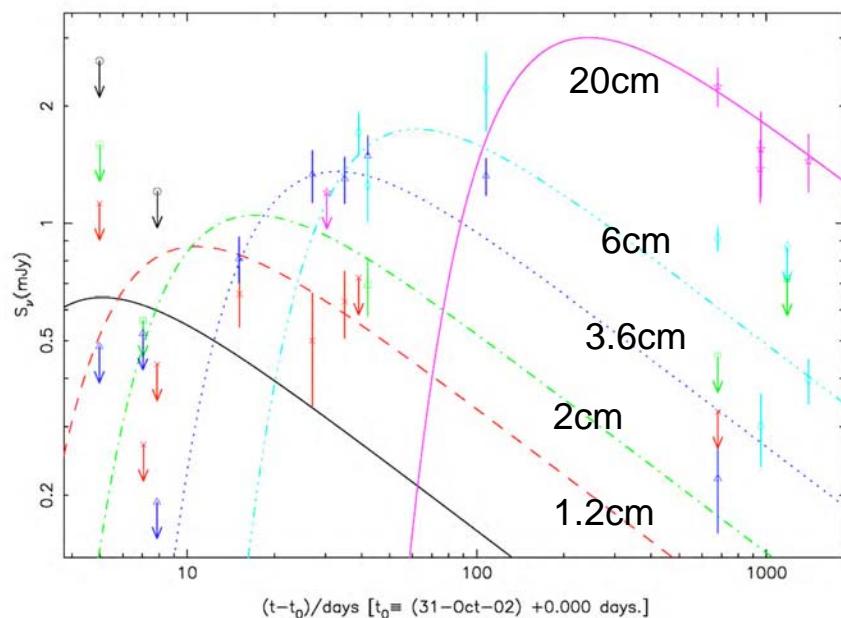
2001gd
(21.6 Mpc)



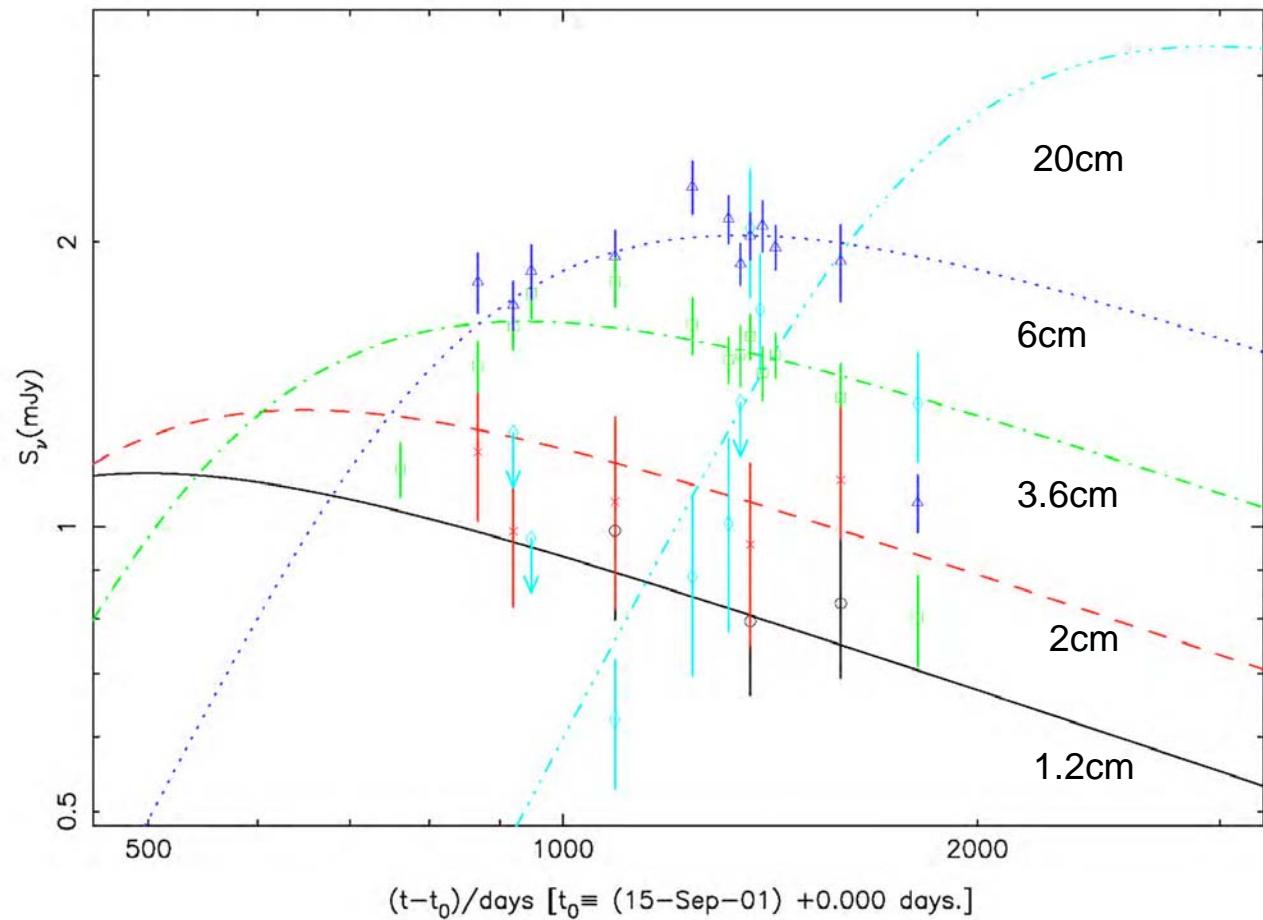
Type IIP SNe

2002hh
(6.3 Mpc)

2004et
(6.3 Mpc)



Type IIn SN 2001em (90 Mpc)

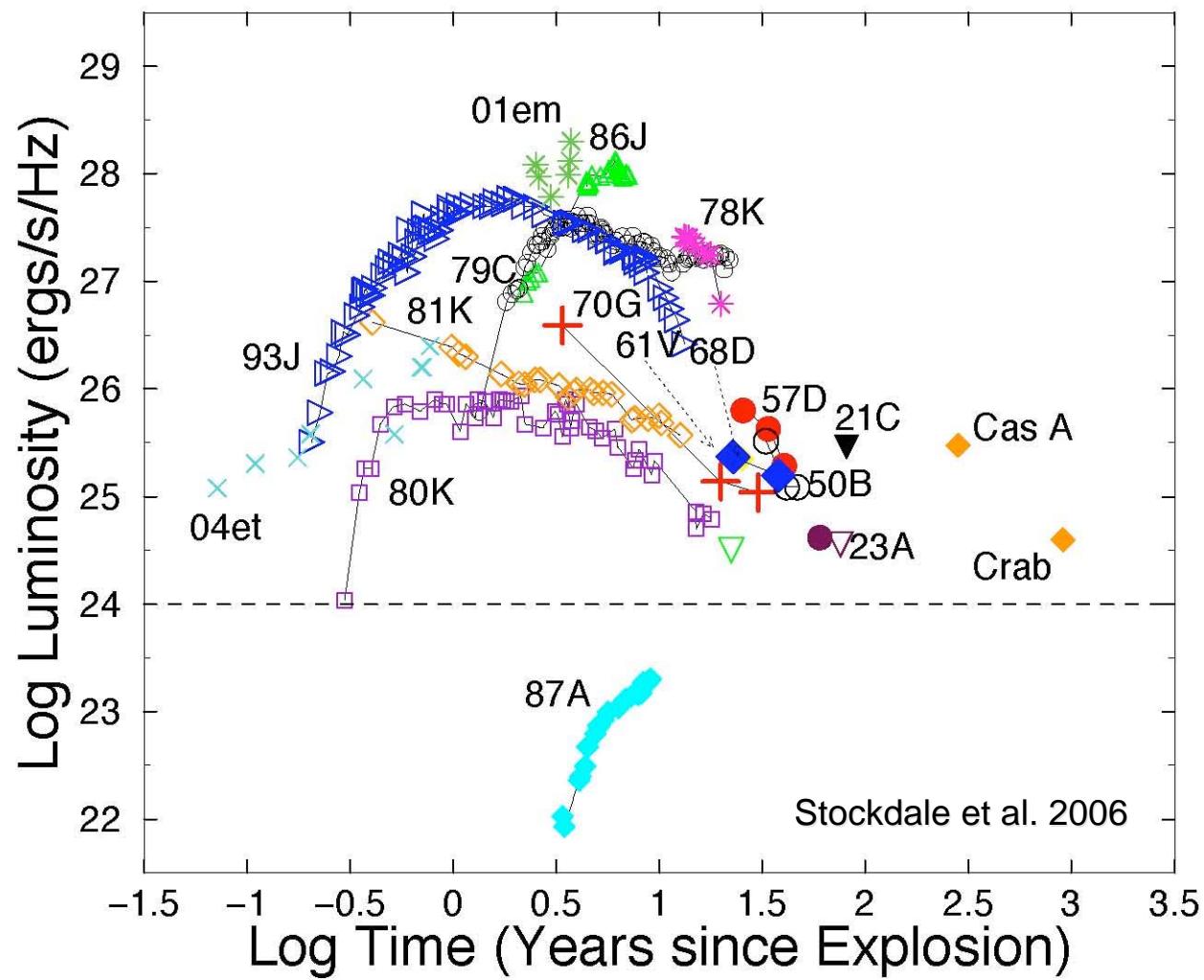


21 Feb. 07 - Stockdale - 20th Anniversary of SN 1987A

Summary of Recent Radio Measurements

- Spectral Index $S_v \sim v^{+\alpha}$
 $(-0.70 < \alpha < -1.10)$ Type IIn - IIb - IIP
- Time Decay ($S_v \sim t^{+\beta}$)
 $(-0.50 < \beta < -0.75)$ Type IIn - IIP - IIb
- 6cm Peak Luminosity ($\text{erg s}^{-1} \text{ Hz}^{-1}$)
 $(\text{IIP}) \sim 10^{25}$ $(\text{IIb}) \sim 10^{27}$ $(\text{IIn}) \sim 10^{28}$
- Estimated Mass Loss Rates ($M_{\text{Sun}} \text{ yr}^{-1}$)
 $(\text{IIP}) \sim 10^{-6}$ $(\text{IIb}) \sim 10^{-5}$ $(\text{IIn}) \sim 10^{-4}$

Radio Supernovae 20 cm Light Curves



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M83

Green: Unc.
Red: Steep
Yellow: Flat
Blue: Inverted

Maddox et al. 2006

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M51

Green: Steep

Red: Unc.

Yellow: Flat

Blue: Inverted

Maddox et al. 2007

21 Feb. 07 - Stockdale - 20th Anniversary of SN 1987A